

ACTION SUMMARY
SPECIAL BOARD WORKSHOP MEETING

October 20, 2007 – 9:00 a.m.

**Administration Building
2101 Hurley Way, Sacramento, CA**

**SAFETY, OPERATION & MANAGEMENT REVIEW OF
DISTRICT'S AIR OPERATIONS PROGRAM**

**Workshop Facilitator – Arthur J. Negrette
Flight Safety Institute**

CALL TO ORDER

President Kelly called the meeting to order. Board Members Present: Clark, Engellenner, Goold, Jones, Kelly, Lawson, Trujillo, Valley. Director Granados, absent.

Others present: Fire Chief Mette, Board Clerk Tilson, General Counsel Margarita, Associate General Counsel Chavez, Deputy Chief Wynn Latta, Deputy Chief Geoff Miller, Assistant Chief Mike Johnson, Battalion Chief Dave Brown, Captain Dave Stoddard, Finance Director Bill Sponable, Rich Schmiedt, and Air Operations crew members: Captain Rick Griggs, Flight Officer; Chuck Smith, Pilot; Engineer Allen Getreu, Crew Chief; Greg Desy, Aircraft Mechanic-DynCorp; Assistant Chief Pat Van Den Broeke, Cal Fire.

**PUBLIC OPPORTUNITY TO DISCUSS MATTERS OF PUBLIC INTEREST WITHIN
DISTRICT JURISDICTION ON ITEM (S) SCHEDULED ON THE AGENDA:** None

1. **OVERVIEW OF STUDY**
 - A. **Scope of Project**
 - B. **Methodology**
 - C. **Objectives**
2. **FINDINGS**
 - A. **Program Management and Implementation**
 - B. **SMFD's UH-1H Helicopter**
 - C. **Flight Crew Qualifications, Experience and Training**
 - D. **Flight Operations and Missions**
3. **CONCLUSIONS**
4. **RECOMMENDATIONS**
 - A. **Priority I Recommendations**
 - B. **Priority II Recommendations**
 - C. **Priority III Recommendations**

Art Negrette of the Flight Safety Institute presented an overview of the Final Report based on the analysis, findings, conclusions and recommendations of his study, with the focus of this workshop on the future of the Air Operations Program.

The Final Report distributed to the Board at its last meeting described the on-site "Safety, Operations, and Management Review" of the District's Air Operations Program.

The Report contained a three-page Executive Summary and the following seven chapters, which were presented in detail:

- Chapter I – sets forth Terms of Reference relating to the project scope, format, evaluation criteria, locations visited, district individuals consulted, and aviation terminology and acronyms.
- Chapter II – presents an overview of program management and considers organization structure, staffing, and implementation practices.
- Chapter III – technical review of helicopter certification, performance, and the District's aircraft maintenance/inspection practices, including data regarding U. S. registered helicopter accidents, an assessment of equipment installed on the District's military surplus UH-1H helicopter (Copter 1), and an analysis of alternative helicopters.
- Chapter IV – a detailed review of pilot qualifications, airman certification, training and testing, flight-time experience.
- Chapter V – analysis of flight operations and missions performed by "Copter 1" during 2005 and 2006.
- Chapter VI – specific findings.
- Chapter VII – prioritized Recommendations.

The following Recommendations and Priorities were based on the 11-page Findings in Chapter VI:

A. IMPLEMENTATION PRIORITIES

1. Priority I: Immediate corrective or follow-up action.
2. Priority II: Remedial action or resolution of issue within 90 days.
3. Priority III: Alleviate non-conforming condition, deficiency or deviation within 180 days

B. PRIORITY I RECOMMENDATIONS

1. Revise and up-date SMFD's Helicopter Maintenance & Inspection Program Manual to require: 1) compliance with the FAR's; 2) that a certified Airframe and Power-plant ("A & P") Mechanic with an Inspection Authorization endorsement ("sign-off") all required inspections and maintenance or repairs/alterations; and 3) adopt a policy that required inspections and component "life-limits" will not be over-flown.
2. Adopt a new policy that directs Air Operations personnel (pilots, flight officers, and crew chiefs) and contractors to comply with Part 91 ("General Operating and Flight Rules") of the Federal Aviation Regulations.
3. The District should not impose charges, fees or collections on individuals or private organizations to recover the cost of helicopter operations notwithstanding that such operations may result from foreseeable recklessness or otherwise intentional acts that endanger one or more individuals.
4. Do not operate Copter 1 until the Chief Pilot has up-dated the Operator's Manual for the District's UH-1H helicopter with all Revisions issued by the U.S. Army.
5. Issue a management directive that all future revisions/changes to the UH-1H Operator's Manual be promptly "posted" and confirm that all Air Operations personnel are familiar with the revisions.
6. Request the District's maintenance contractor to evaluate and up-date the "hourly", "calendar" and "special inspection" checklists utilized for maintaining Copter 1.
7. Revise the SMFD Helicopter Maintenance and Inspection Program Manual by deleting the provision which allows an SMFD pilot to perform and "sign off" a 25-hour inspection on Copter 1.

8. Revise SMFD's Helicopter Maintenance and Inspection Program Manual to require timely compliance with all required inspections.
9. Strictly enforce the Helicopter Maintenance and Inspection Program Manual's provisions regarding timely compliance with all applicable Airworthiness Directives.
10. Require a certified Airframe and Powerplant ("A & P") Technician to determine if any AD's issued by FAA for the Bell 205 or B-212 helicopters or U.S. Army "Safety of Flight" Messages are applicable to the District's UH-1H helicopter and initiate immediate measures to achieve complete compliance with all AD's, SB's and Safety of Flight (SOF) Messages applicable to the B-205, B-212 or UH-1H, respectively.
11. Modify the "Maintenance and Inspection Tracking Report" utilized for Copter 1 to include data regarding when the helicopter's pitot-static system and compass are due calibration and data regarding when special mission equipment is due an inspection or replacement.
12. Confirm that all pilots utilized for the 2007 season possess a valid First-Class or Second-Class Medical Certificate as required by the SMFD's Air Operations Policies Manual (Section 601.00).
13. Adopt the *"Minimum (Experience) Qualifications" set forth in the Draft "Helicopter Fire-Fighting and Rescue Pilot" Job Description* previously prepared by the FLIGHT SAFETY INSTITUTE and submitted to SMFD senior management.

C. PRIORITY II RECOMMENDATIONS

1. Staff the Air Operations Program with a sufficient number of permanent SMFD employees so that the Helicopter Manager is not also tasked as the Training Officer, Safety Officer or Maintenance Officer.
2. At the earliest possible date, establish and fund permanent "Pilot", "Flight Officer" and "Crew Chief" positions within the Air Operations Program. Individuals accepting these appointments should commit to a minimum assignment within the Air Operations Program of at least three (3) years.

3. Revise Section 600.00 of SMFD's Air Operations Policies Manual to establish a new organizational structure for managing the Air Operations Program and develop more detailed and specific statements regarding the duties and responsibilities of assigned personnel.
4. Designate one (1) pilot as Chief Pilot, assign one (1) pilot the collateral duty of Aviation Safety Officer, assign one (1) Flight Officer the collateral duty of Training Officer, and assign one (1) Crew Chief the collateral duty of procuring, maintaining and servicing personal protection equipment for crew members.
5. Require pilots employed by SMFD that have reached their 60th birthday to obtain a Second-Class Medical Certificate at 6-month intervals.
6. At the earliest opportunity, give serious consideration to acquiring a new or used FAA certificated helicopter.
7. Revise and up-date the Air Operations Policies Manual into a more "user friendly" format and expand the Manual's scope to provide a more comprehensive presentation of standards, operating procedures, responsibilities, and prohibitions.
8. Develop and implement a system of "performance and quality measures" (metrics) that provide SMFD managers with quantifiable information on a monthly and quarterly basis which measures critical output or activity of the Air Operations Program.
9. Require the attendance of all Air Operations personnel at quarterly Safety Meetings with a record of attendance and a published agenda.
10. Establish and prominently display an Air Operations Safety Policy that is signed by the SMFD Fire Chief.
11. Provide a direct organizational "link" between the Aviation Safety Officer and the Deputy Chief for Operations and require the Safety Officer to confer with the Deputy Chief on a monthly basis regarding existing and potential aviation safety issues.
12. Appoint a permanent Chief Pilot at the earliest possible date and authorize this individual to approve additional pilots and crew members as necessary to accomplish mission requirements.

13. Obtain reliable performance data (charts and tabular format) for the T-53-L-703 turbo-shaft engine installed in the District's UH-1H helicopter.
14. At the earliest opportunity, permanently install an up-graded GPS unit (with a color moving map display) on Copter 1 that satisfies the requirements set forth in Interagency "Call-When-Needed" Type I and II Standards.
15. Amend the Air Operations Policies Manual, to require that pilots age 60 and older obtain a First-Class or Second-Class Medical Certificate at 6-month intervals.
16. Require pilots and flight officers to successfully complete an annual "closed book" examination, of UH-1H "bold face" emergency procedures, applicable "Cautions", "Notes" and "Warning" promulgated in the Operator's Manual, and aircraft/engine operating limitations.
17. Designate a SMFD Flight Officer as the Air Operations Training Officer and assign this individual responsibility for updating and implementing all facets of the Air Operations Training Plan and Schedule.
18. Require the Air Operations Training Officer to prepare and provide senior management with a monthly performance report regarding completion of established training objectives by all personnel assigned to the Air Operations Program.
19. Revise and up-date the Air Operations Training Plan and Schedule to identify the specific training courses and functional testing requirements for each crewmember position (pilot, flight officer and crew chief) and the frequency for completing these courses and tests.

D. PRIORITY III RECOMMENDATIONS

1. Increase staffing of the Air Operations Program by establishing the following permanent positions: one (1) Helicopter Manager; three (3) pilots; three (3) Flight Officers; three (3) Crew Chiefs, one (1) Maintenance Manager, and one (1) Administrative Assistant.

2. Acquire a multi-engine helicopter with sufficient single-engine power to comply with 14 CFR 133.45 (e) if the Air Operations Program is expected to execute helicopter "hoisting" operations.
3. Establish an Air Operations Safety Committee with one (1) member from SMFD's executive management team. Document issues discussed and individuals tasked to report-back on resolution.
4. Conduct an internal audit (self-inspection) of an Air Operations functional area (manuals, facilities, crew training, aircraft records, personal protection equipment, etc.) every 90 days.
5. Surplus military helicopters in excess of 35 years since the manufacturing date should not be utilized by SMFD unless the aircraft, engine, rotating components and avionics are up-graded with modern technology.
6. To significantly improve operational performance and mission effectiveness, acquire a B-210 or B-412 helicopter at the earliest possible date and utilize this aircraft as the primary operational aircraft.
7. Of the aircraft considered, the B-210 helicopter is the most effective aircraft for performing wildfire suppression and offers sufficient capability as a certificated Transport Category Helicopter to accomplish other low risk missions in support of the District's field operations.
8. Of the aircraft considered, the B-412 is the most effective helicopter for executing an "all risk" operational concept.
9. Add additional training courses to the Training Plan's "Monthly Basic Training Schedule" that strengthen the knowledge of crew members regarding aircraft emergency procedures, aircraft systems, crew coordination, and compliance with FAA and SMFD operating procedures.
10. Review and re-draft Sections 620:00 and 620:30 of the Air Operations Policies Manual to achieve greater clarity and conformity with the District's Air Operations Training Plan and Schedule.

Comment Period:

- Many of the recommendations in the Final Report have been implemented since the inception of the study such as appropriate insurance coverage for aircraft.

Accomplishing the on-site helicopter maintenance personnel was a definite program improvement.

- Interviews for the Final Report were conducted with current management level employees only.
- The recommendation for an increase in the Air Operations Program staffing is based on a 365-day program that currently may be excessive for the District's use but could be implemented on an incremental basis for summer and winter operations.

Board policy decisions on wildland open space firefighting suppression or an overall program with rescues, hoisting operations, etc. for a full-service operation will govern the issue of staffing and type of aircraft.

[Director Engellenner departed at 9:47 a.m.]

- Military aircraft are designed to serve a certain purpose or mission but are not substandard to civilian aircraft.
- Recommended acquiring a new or used certificated FAA helicopter. The mission will determine the type of helicopter. A twin-engine aircraft with more robust capabilities is recommended for rescue operations, hoisting, etc.
- Various graphs and charts illustrated the type of Copter I incident response, with grass fires at 81.2% for 2005 and 77.6% in 2006; comparison of maximum airspeeds of alternative helicopters versus UH-1H; comparative analysis of maximum payload performance of the UH-1H, B-210, B-212, and B-412EP; comparison of height versus speed velocity with maximum gross weight of UH-1H and the B-412EP with one inoperative engine.

Mr. Negrette stated the City of Los Angeles intends to dispose of two B-412s next year through the bid process. He approximated a \$2.5 million cost and felt it merits staying in touch and hiring someone to look at the aircraft and advise the District on the condition and a fair bid price. Estimated cost of a basic new B-412 aircraft at \$9 million or \$10 million.

- Discussion on financial affordability and risk management.

Director Goold stated we are looking at a regional asset when considering a \$10 million helicopter and suggested partnering with other agencies on the cost.

Mr. Negrette stated co-owners of the asset would eliminate the need for agreements by going into a pooled program.

- Pros and cons of FAA certificated aircraft were discussed with two differing opinions voiced.
- Fire Chief Mette stated the majority of our current mission is wildland fire suppression but need to look at the future use and stabilize the program.
- Art Trask of DynCorp International commented on the UH-1H versus a twin-engine helicopter. He outlined options and stated Copter 1 can be disassembled and upgraded to the equivalent of an H-210 like CDF did about ten years ago. It is an airworthy aircraft, more economical to maintain than a certificated helicopter, operating costs would be about the same as now or go down because of a new engine. To complete the upgrade would cost around \$800,000 to \$1 million.
- Relative to helicopter components stored at McClellan, a tracking system is being put in place.

Greg Desy, aircraft mechanic with DynCorp, stated around 50% of the parts are valuable and the other half is red-tagged for destruction. Most of the parts have been identified as to ownership. The usable parts can be utilized to upgrade the UH-1H to the equivalent of an H-210 and explained the retrofit process in detail. About 30% of an upgrade has been done.

- Board President Kelly extended his appreciation to everyone for the work put into this report. It is comprehensive in building an education on the Program. Looking forward to moving ahead.
- In response to questions, Fire Chief Mette stated this is a presentation item but it will come back to the Board. The District has some financial issues which he will discuss with the Finance Director. About 30% of the upgrades have been made to Copter 1. If there is a cost of \$700,000 to complete the upgrade, that is a Board decision.

He requested the Chief Pilot's job description be placed on the Policy Committee Agenda. Due to scheduling constraints, the current meeting will be rescheduled.

- The Board members thanked Mr. Negrette for the presentation of his Final Report.

ADJOURNMENT: Board President Kelly adjourned the meeting at 12:30 p.m.

Matt Kelly, President

Thomas J. Lawson, Secretary

Charlotte Tilson, Clerk of the Board